Listing of Claims:

Following is a listing of all claims in the present application, to which no amendments have been made:

1. (Previously presented) A printer head using a radio frequency micro-electromechanical system (RF MEMS) sprayer, comprising:

an inner pressure chamber having a liquid inlet and a liquid outlet;

a cavity resonator surrounding the inner pressure chamber, wherein the cavity resonator provides a predetermined cavity resonance frequency signal to increase an inner pressure of the inner pressure chamber;

a signal transmitting unit for generating the predetermined cavity resonance frequency signal and for inputting the generated cavity resonance frequency signal into the inner pressure chamber through the cavity resonator in response to an external input control signal, the signal transmitting unit being electrically isolated from the cavity resonator; and

a liquid chamber for supplying a liquid to the inner pressure chamber, the liquid chamber being in flow communication with the inner pressure chamber through the liquid inlet,

wherein the liquid inlet and the liquid outlet each extend through the inner pressure chamber and the cavity resonator so that when an inner pressure of the inner pressure chamber is increased by the cavity resonator, a liquid from within the inner pressure chamber is ejected outwardly through the liquid outlet.

2.-3. (Canceled).

4. (Previously presented) The printer head as claimed in claim1, further comprising a substrate having a nozzle disposed in a position corresponding to the liquid outlet, wherein the cavity resonator includes a coupling slot formed on a lower side of the cavity resonator, which is in contact with the substrate, the coupling slot coupling the cavity resonance frequency signal to the cavity resonator.

5. (Original) The printer head as claimed in claim 4, wherein the signal transmitting unit is disposed at a position corresponding to the coupling slot with the substrate being disposed therebetween.

6. (Original) The printer head as claimed in claim 5, wherein the signal transmitting unit comprises:

a signal generator for generating the cavity resonance frequency signal; and

a signal input terminal disposed at a position corresponding to the coupling slot for inputting the cavity resonance signal to the cavity resonator through the coupling slot.

7. (Original) The printer head as claimed in claim 6, wherein the signal transmitting unit further comprises:

a signal amplifier for amplifying the cavity resonance frequency signal from the signal generator.

8. (Previously presented) The printer head as claimed in claim 1, further comprising a substrate having a nozzle disposed in a position corresponding to the liquid outlet, wherein the signal transmitting unit is disposed at a position on the substrate corresponding to the liquid outlet, the substrate being disposed therebetween, the signal transmitting unit inputs the cavity resonance signal into the cavity resonator through the liquid outlet, wherein the nozzle extends to a position corresponding to the liquid outlet.

9. (Original) The printer head as claimed in claim 1, wherein the cavity resonator further comprise:

a coupling slot formed on a side of the cavity resonator for receiving the cavity resonance frequency signal into the cavity resonator.

10. (Original) The printer head as claimed in claim 1, wherein the liquid inlet prevents a liquid inside the inner pressure chamber from flowing back into the liquid chamber when an inner pressure of the inner pressure chamber is increased by the cavity resonator.

11. (Previously presented) The printer head as claimed in claim 1, further comprising a substrate having a plurality of nozzles, each nozzle corresponding to a position of one of a plurality of liquid outlets.

12. (Original) The printer head as claimed in claim 11, wherein the inner pressure chamber surrounded by the cavity resonator is a plurality of inner pressure chambers, each being surrounded by a respective one of a plurality of cavity resonators, and wherein each of the plurality of inner pressure chambers is disposed at a predetermined distance interval from an adjacent one of the plurality of inner pressure chambers.

13. (Previously presented) The printer head as claimed in claim 1, further comprising a substrate having a nozzle disposed in a position corresponding to the liquid outlet, the substrate being attached to a lower side of the cavity resonator where the liquid outlets are formed, wherein the signal transmitting unit is attached to the substrate opposite the cavity resonator.

14. (Previously presented) The printer head as claimed in claim 1, wherein the signal transmitting unit extends past the liquid outlet and having a hole disposed in a position corresponding to the liquid outlet.

15. (Previously presented) The printer head as claimed in claim 14, wherein the signal transmitting unit comprises:

a signal generator for generating the cavity resonance frequency signal; and

a signal input terminal disposed at a position to the hole for inputting the cavity resonance signal to the cavity resonator through the hole.

16. (Previously presented) The printer head as claimed in claim 15, wherein the signal transmitting unit further comprises:

a signal amplifier for amplifying the cavity resonance frequency signal from the signal generator.

17. (Previously presented) The printer head as claimed in claim 16, wherein an amplification factor of the signal amplifier is adjusted to control a pressure of the inner pressure chamber.

18. (Previously presented) The printer head as claimed in claim 14, wherein the cavity resonator comprises a metal surrounding the inner pressure chamber except at the liquid inlet and the liquid outlet.

19. (Previously presented) The printer head as claimed in claim 4, wherein the cavity resonator comprises a metal surrounding the inner pressure chamber except at the liquid inlet, the liquid outlet and the coupling slot.

20. (Previously presented) The printer head as claimed in claim 7, wherein an amplification factor of the signal amplifier is adjusted to control a pressure of the inner pressure chamber.

21. (Previously presented) A printer head using a radio frequency micro-electromechanical system (RF MEMS) sprayer, comprising:

an inner pressure chamber having a liquid inlet and a liquid outlet;

a cavity resonator surrounding the inner pressure chamber, wherein the cavity resonator controls an inner pressure of the inner pressure chamber;

an antenna providing a cavity resonance frequency signal to the cavity resonator; and

a liquid chamber for supplying a liquid to the inner pressure chamber, the liquid chamber being in flow communication with the inner pressure chamber through the liquid inlet,

wherein the liquid inlet and the liquid outlet each extend through the inner pressure chamber and the cavity resonator so that when an inner pressure of the inner pressure

chamber is increased by a cavity resonance frequency signal supplied to the cavity resonator, a liquid from within the inner pressure chamber is ejected outwardly through the liquid outlet.

22. (Previously presented) The printer head as claimed in claim 21, wherein the cavity resonator further comprises:

a coupling slot formed on a side of the cavity resonator for receiving the cavity resonance frequency signal into the cavity resonator.